

Appln. No. 10/743,394
Amdt. Dated Mar. 17, 2005
Reply to OA of Sep. 17, 2004

Amendments to the Drawing:

The attached new sheet of the drawing includes a new Figure 7.

Attachment: Replacement Sheets 1-6 and New Sheet 7

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ARGUMENTS

The undersigned respectfully requests an Examiner interview once the Examiner has received this response.

In the Specification, the text has been amended to include the new Figure 7.

In the Claims, claims 1 and 5 have been amended and claims 1-13 are pending in this application.

In the Drawings, new Figure 7 has been added.

Drawings

The Office objected to the drawings under 37 C.F.R. § 1.83(a). Applicants have added a new Figure 7 to the application showing a non-finned tube coil as recited in claim 4. No new subject matter is being added, as this feature is explicitly described in the specification on page 11, paragraph 33 and in original claim 4.

Rejection Under 35 U.S.C. § 102(b)

The Office rejected claims 1-3 under 35 U.S.C. § 102(b) as being anticipated by the Cur et al. reference (U.S. Patent No. 5,157,941). Applicants respectfully traverse this rejection.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co.*, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). In this case, the Office has not satisfied this requirement.

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Claim 1 as amended herein recites an evaporator for a refrigerated merchandiser comprising a first fin and tube heat exchanger coil having a refrigerant inlet, a refrigerant outlet, and a first fin density. Claim 1 further recites a second fin and tube heat exchanger coil having a refrigerant inlet, a refrigerant outlet, and a second fin density, where the second fin density is greater than said first fin density. More over claim 1 recites that air flow into the evaporator initially passes across said second fin and tube heat exchanger coil and subsequently passes across said first fin and tube heat exchanger coil.

The Examiner alleged that Figs. 1, 3, and 5 and column 3 at lines 42-58 of the Cur et al. reference taught the claimed subject matter of the present invention. The Cur et al. reference is directed toward a consumer refrigerator having a freezer section and a main refrigerator section. (Fig. 1). This creates two distinct cooling regions which require separate cooling treatment. The Cur et al. reference discloses a tube and fin-type evaporator for a refrigerator having trapezoidally shaped fins with the wider portion of the fins disposed upstream in the cooling air flow path through the evaporator. (Abstract). The cited portion by the Examiner of the Cur et al. reference teaches the use of varying fin densities in combination with segregated air flow. Specifically the Cur et al. reference states "air returning from the enclosure 14 SHOULD be directed toward the low fin density region of the evaporator in order to reduce frost clogging problems. Col. 3, lines 50-53, emphasis added. Moreover it states that cooling air from separate enclosures (i.e., the freezer 12 and the main refrigerator enclosure 14) be preferably directed towards different fin density regions in the evaporator. The Cur et al. reference states that in the case of dual fin densities there should segregated air flow arrangements, such that the air returning from enclosure 14 should be directed to a low fin density region, whereas the air returning from enclosure 12 should be directed to a high fin density region.

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In contrast the present invention is directed toward a commercial refrigerated merchandiser. This different application has different cooling and air flow requirements simply by the distinct nature of the apparatus. For example, as shown in Fig. 3 of the present invention, there is one cooling compartment with one side being exposed to the elements. The Cur et al. patent discloses a typical consumer refrigerator with no enclosure being designed to be permanently open to the elements. The temperature of the air returning from the freezer section would be below 32 degrees F and have no moisture content detrimental to the evaporator. Thus the present invention addresses a more complex apparatus.

The present invention describes and claims an evaporator having a first heat exchanging coil with one fin density, and a second heat exchanging coil having a fin density greater than the fin density of the first coil. As shown in Figures 5 and 6, the air flow over the evaporator is not segregated or parallel, but instead serial over heat exchangers with different fin densities. See Paragraph 028. This arrangement is advantageous given the distinct nature of the present merchandiser apparatus as opposed to consumer refrigerator of the Cur et al. reference. The refrigerant and the air are at their highest respective temperatures at the upstream of the evaporator 40 (e.g., the right side of Fig.4). Therefore, the second heat exchanging section is warmer than the first heat exchanging section and can maintain a temperature greater than 32 degrees F. Moisture in the air can then be removed via conventional draining, thus reducing or preventing frost building up in the first heat exchanging section. In the present invention, all of the air is being passed over all of the evaporator, having at least two distinct fin density sections. If, in the present invention, the air were to be segregated as taught in the Cur et al. reference, the problem of frost on the evaporator would not be solved. See Paragraphs 031-032.

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The Cur et al. reference says "air returning from the enclosure 14 SHOULD be directed toward the low fin density region of the evaporator in order to reduce frost clogging problems. Col. 3, lines 50-53, emphasis added. This teaches away from the present claimed invention because the high density fin region is essential for removing moisture in the air as described above.

In view of the foregoing, Applicants submit that independent claim 1 recites patentable subject matter. As claims 2-3 depend from independent claim 1, Applicants submit that these dependent claims also contain patentable subject matter being dependent from a claim containing patentable subject matter.

Rejection Under 35 U.S.C. § 103(a)

Claim 4

The Office rejected claim 4 under 35 U.S.C. § 103(a) as being unpatentable over the Cur et al. reference in view of the Uemura et al. reference (U.S. Application No. 20010017203A1). Applicants respectfully traverse this rejection.

Applicants contend that the Cur et al. reference and the Uemura et al. reference, whether taken individually or in combination, do not teach or suggest the present claimed invention. It is only through impermissible hindsight reasoning to the Applicants' disclosure that one of ordinary skill in the art would have been motivated to make the proposed combination.

The Uemura et al. reference is directed to an automotive air conditioning unit application. This a non-analogous art. The operating parameters of an automotive application are completely distinct from the refrigerated merchandiser application. The refrigerant, the pressures, the temperatures, the air flow patterns and the moisture content issues are all distinct

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given the varying applications. The mere fact that one of the final paragraphs mentions in passing that an evaporator can have no fin does not render the subject claim obvious. The Uemura et al. reference is addressing the use of scroll casing for physical space limitations and fan efficiency issues. No where does this art describe or address problems related to moisture or evaporator defrost issues.

The Office supports its rejection by picking and choosing components to be combined from the two cited references. However, it is well established that "[i]t is impermissible . . . simply to engage in a hindsight reconstruction of the claimed invention, using the applicant's structure as a template and selecting elements from references to fill the gaps. [Citation omitted.] The references themselves must provide some teaching whereby the applicant's combination would have been obvious." In re Gorman, 18 U.S.P.Q.2d 1885,1888 (Fed. Cir. 1991). Because none of the references provides any such teaching, it appears that the rejection is based on an improper hindsight analysis.

To establish a proper 35 U.S.C. § 103 rejection, the Office must establish a *prima facie* case of obviousness. *In re Vaack*, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

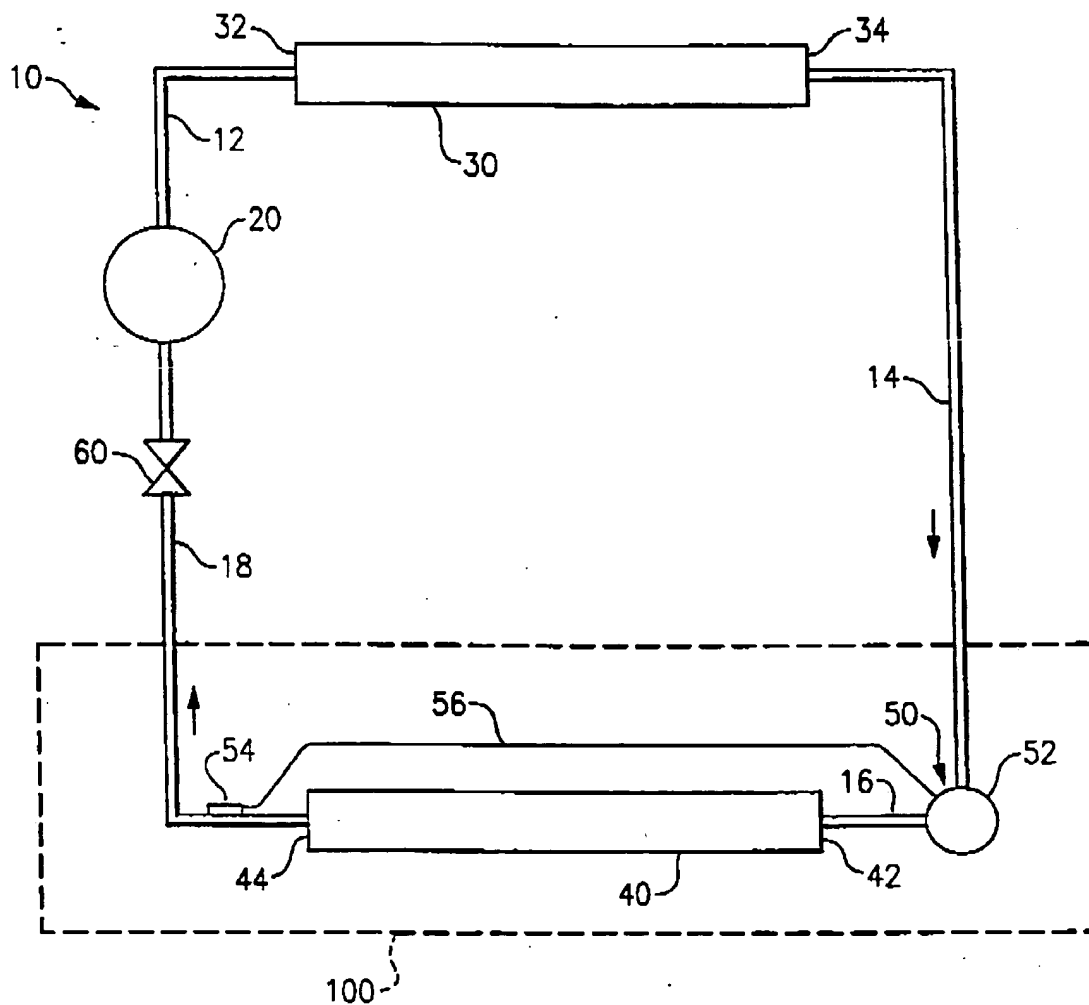
To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.

§ 2142 Manual of Patent Examining Procedure, 7th ed., 1st rev. (Feb. 2000), ch. 2100, p.

97. The Office bears the initial burden of factually supporting any *prima facie* conclusion of

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Replacement Sheet

**FIG. 1**

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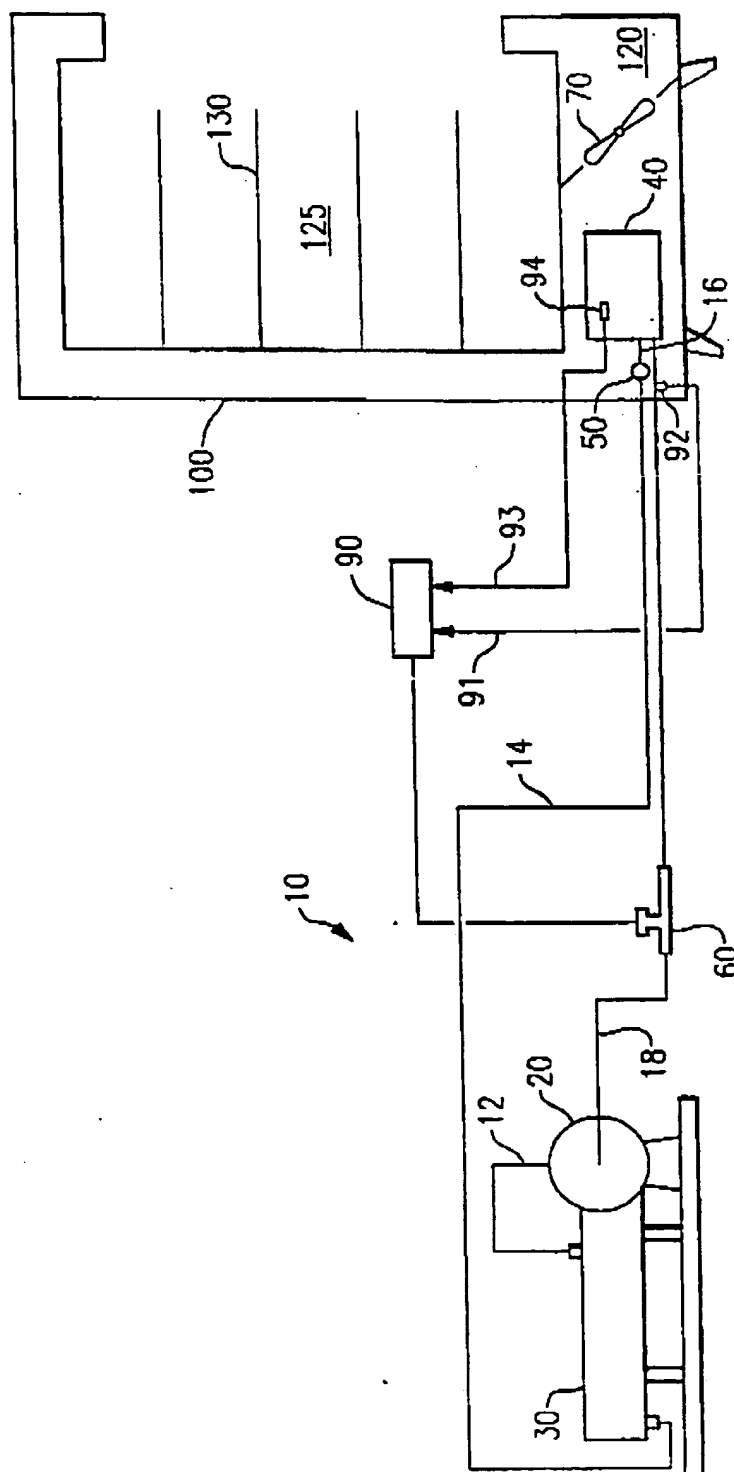


FIG. 2

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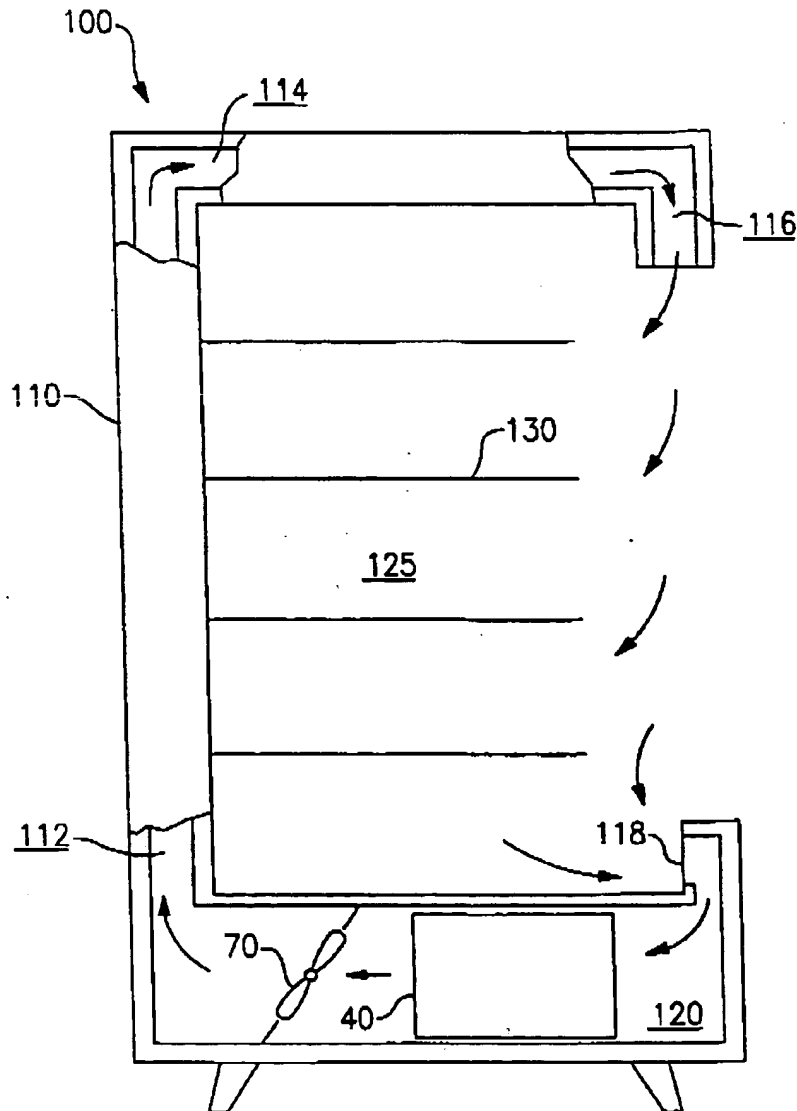
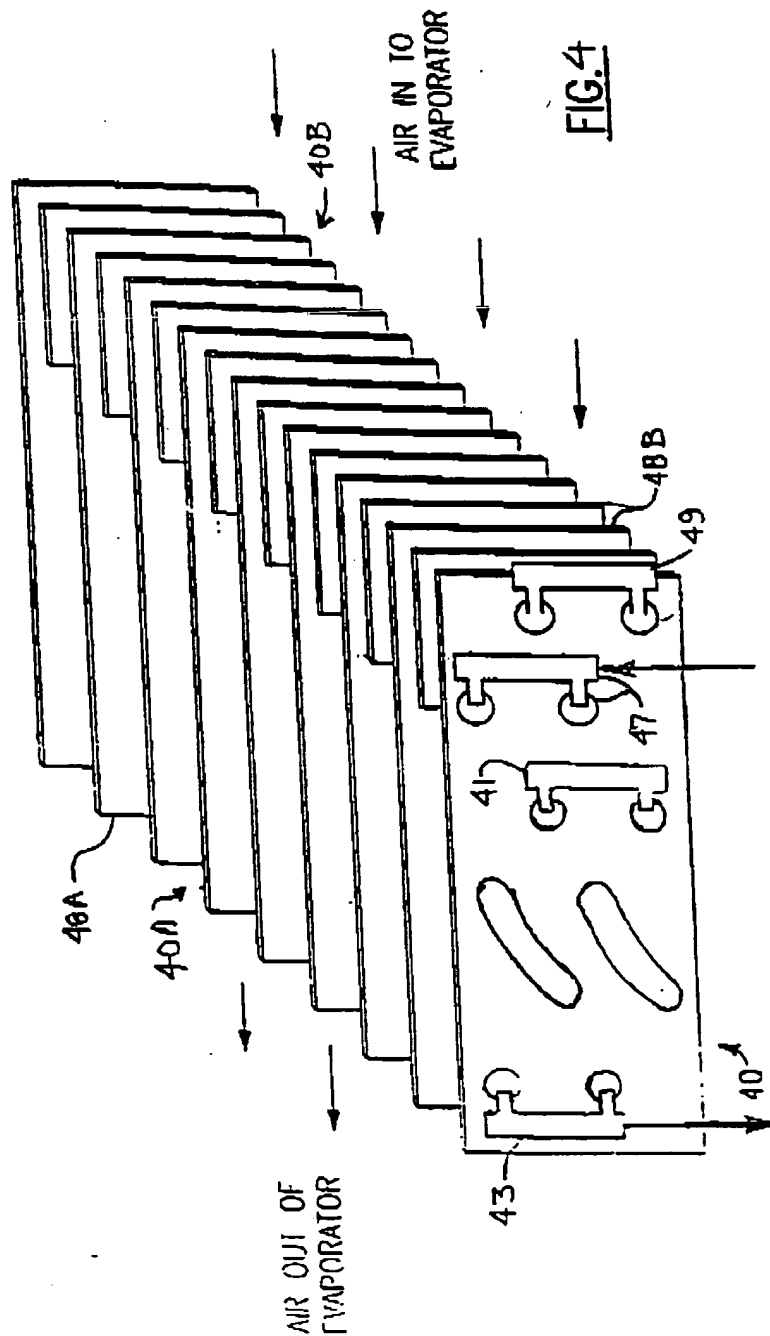


FIG. 3

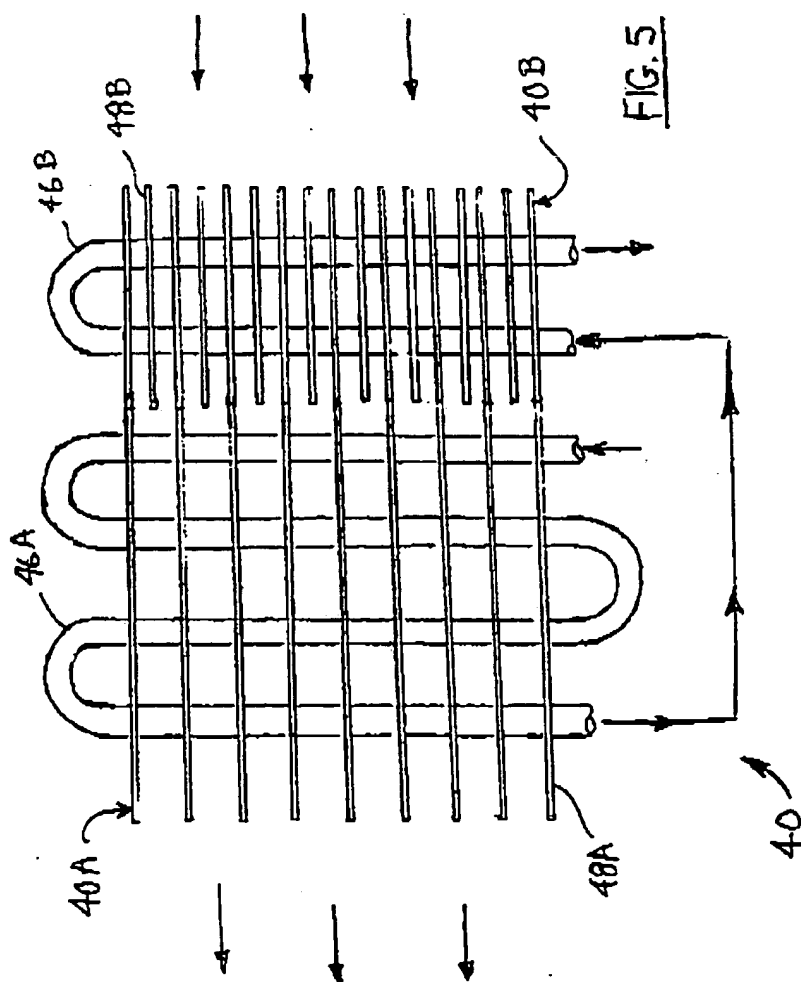
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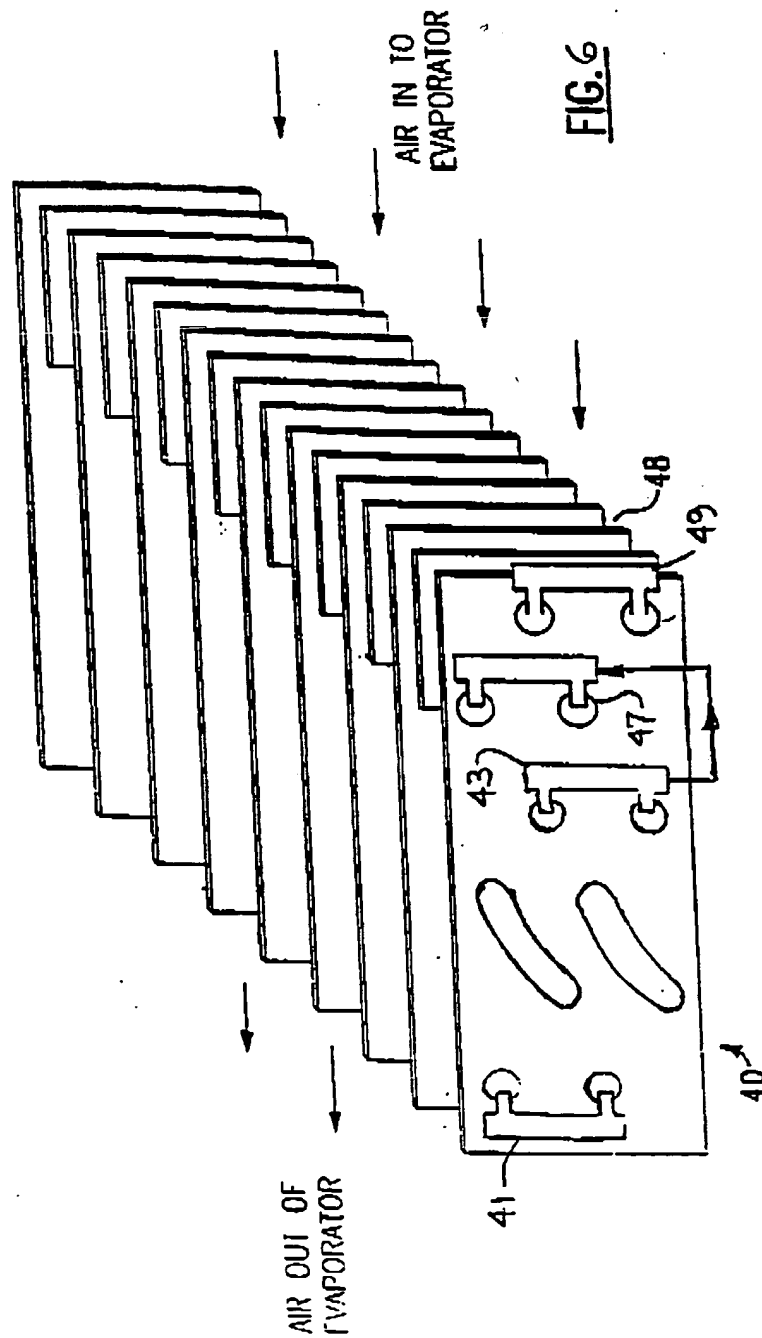
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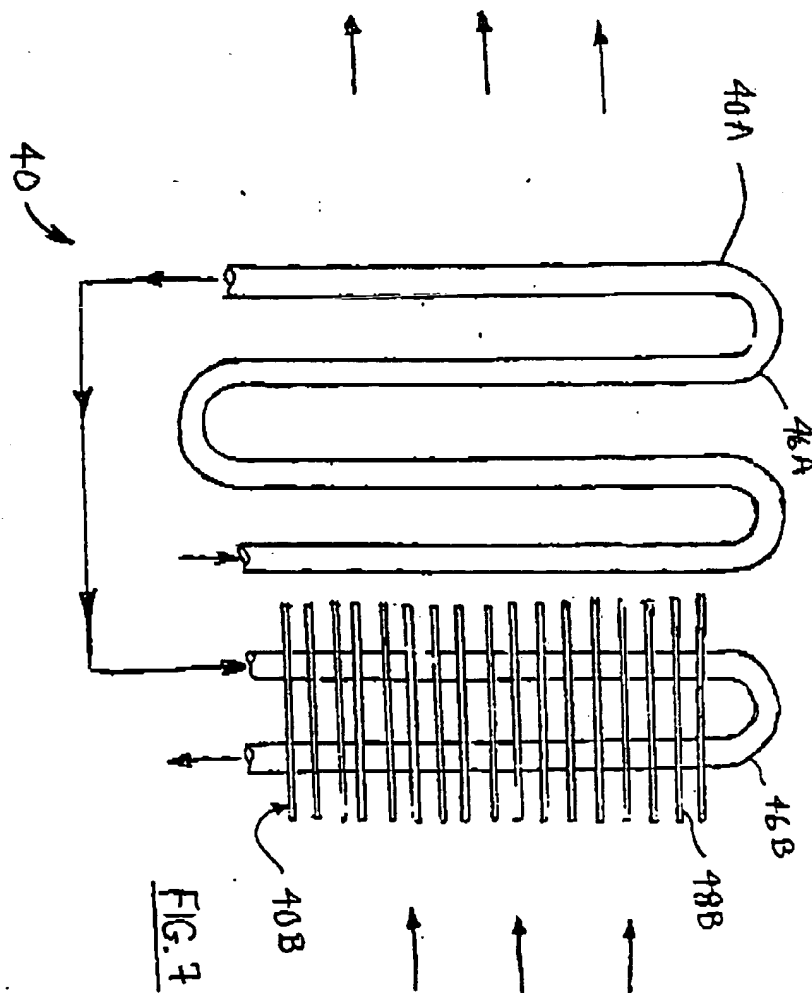
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obviousness. Applicant submits that the Office has not established a *prima facie* case of obviousness with respect to Applicant's claims for at least the following reasons.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). There is no suggestion or motivation either in the references or in the knowledge of one of ordinary skill in the art to modify the teachings of the reference to achieve the claimed invention.

The Uemura et al. reference is solving a different problem in a different application and further goes into no detail about the use of no fins in the evaporator with regard to moisture issues that would suggest or motivate one of ordinary skill in the art to modify the teachings of the reference to achieve the claimed invention.

If the Office chooses to maintain such rejection, Applicants request that the Office provide prior art references which teach all claim limitations such that Applicants may have a full and fair opportunity to respond to such rejection.

In view of the foregoing, Applicants submit that independent claim 4 recites patentable subject matter.

Claims 5-13

The Office rejected claims 5-13 under 35 U.S.C. § 103(a) as being unpatentable over the Cur et al. reference in view of the Renard reference (U.S. Patent No. 5,502,979). Applicants respectfully traverse this rejection.

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Independent claim 5 has been amended in accordance with claim 1 as discussed above.

Claim 12 as originally filed recites "circulating air from the product display area first through the second section of said evaporator, thence through the first section of said evaporator and thence back to the product display area of said refrigerated merchandiser." This element is not taught by the Renard reference as there is no discussion of separate sections of the evaporator having distinct fin densities. Moreover it is not taught by the Cur et al. as discussed above as the Cur et al. reference only discusses distinct fin densities in the evaporator with respect to segregated or parallel air flow paths.

In view of the foregoing, Applicants submit that independent claims 5 and 12 recite patentable subject matter. As claims 6-11 and 13 respectfully depend from independent claims 5 and 12, Applicants submit that these dependent claims also contain patentable subject matter as being dependent from a claim containing patentable subject matter.

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Conclusion

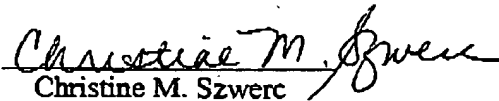
In view of the above remarks, Applicants respectfully submit that claims 1-13 contain patentable subject matter and that the application is in condition for allowance. Applicants respectfully request withdrawal of the outstanding objection and rejections of record.

The undersigned respectfully requests an Examiner interview once the Examiner has received this response.

If the Examiner has any questions pertaining to the prosecution of this application, the Examiner is invited to contact the undersigned at (860) 674-3457.

Respectfully submitted,

By:


Christine M. Szwerc
Attorney for Applicants
Reg. No. 43,177

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Carrier Corporation
One Carrier Place
Farmington, CT 06034